Usability

Usability is the measure of how users experience your site. It is different from usefulness, which would be a description of the content of your site and how useful it is for your target audiences.

Examples would be:

- How a user knows what site he is on.
- How well a user can learn and remember how to use the site.
- How well a user can find specific information.
- How well a user can negotiate interactive features.
- How satisfied a user is with using the site.
- How well errors are handled for the user.

Say, for example, you manage the State Parks site (http://www.mostateparks.com/) for the Department of Natural Resources. You can see from your logs that you get many hits for Elephant Rocks State Park.

> How easy is it to find Elephant Rocks on the State Parks page? Is it easy to navigate to? Is it easier to type in "Elephant Rocks" in the search box and get it that way?
>
> Now pretend you are considering exploring Missouri state parks with someone in a wheelchair. How easy is it to find out what state parks have wheelchair accessibility?

In this case, the information is fairly easy to find. But how many other sites have you been to where you just aren't sure where to find what you are looking for? How many sites have you visited where you weren't sure where to go next to complete a download or submit a form?

Usability requires you to know what your users want from your site, know what you want from your site, and know how to figure out how to make it happen. The rest of this section will discuss some of the steps you can take to make your site more usable.

Branding

Branding is a way of identifying your agency web site. Branding lets users know that they are on a Missouri government web site, and that the site is part of the Missouri state government web.

The usual method of branding is by logo. A logo is a graphic element that your agency uses to identify itself in print or on the web.

Illustration 1 - Missouri State Home Page logo

Illustration 3 - Department of Conservation web logo

Illustration 2 - DNR logo

Standard: Each page must have some way of identifying which agency is responsible for its content, either with a logo or text identifier.

By using a combination of a graphic and text in a banner at the top of each web page, you let users know what agency site they are on and give them a way to recognize other pages that your agency publishes. You can turn the graphic into an icon or, if the logo is suitable, you can even make it into a button that you use in unordered lists. This can help reassure the user that they are getting information from the right agency.

Other ways of branding

Guideline:You should also brand your site by using consistent colors, fonts and layout.

Colors

A consistent color scheme helps remind users that they are still in your site. Consistent colors may be as simple as having a common background color or pattern for all your pages, even though you may use different accent colors to differentiate parts of your site.

Missouri Department of Revenue (http://www.dor.mo.gov/) uses a consistent template with the same background color, but they use a different sidebar and accent color depending on the section that users are in. Tax pages are red, vehicle and drivers' license

pages are green and administration pages are blue. The DOR identity is maintained through all these pages, but the user is made very aware if they inadvertently stray from a tax page onto a vehicle license page. This helps keep users on track for the information they seek.

Fonts

Using a consistent set of fonts is another way of branding your site. Some newspapers, like the Wall Street Journal or New York Times, use a distinctive font so that, even if you only see a clip of an item, you can tell which paper the article came from.

You can set your style sheet to accomplish the same sort of font brand identification. While you want to limit your set of fonts to those most commonly found on users' browsers, by using a particular font and font size for all your <h1>, a consistent font and size for your <h2>, <p> and other tags, users will gain a sense of familiarity with your site because the pages all have a similar look.

In this example, all the headers have the same font family, and all the paragraphs have a different family. The headers all have different sizes to emphasize their place in the document.

```
h1, h2, h3, h4 {font-family: Verdana, Geneva, Arial, Helvetica, sans-serif;}
h1 {font-size: 1.4em;}
h2 {font-size: 1.2em;}
h3 {font-size: 1.1em;}
h4 {font-size: 1.0em;}
p {font-family: "Times New Roman", Times, serif;}
```

Layout

If you use a consistent layout, preferably by developing templates, your site will have a familiar feel to it. Users will know where to find different navigation tools, links, and page content because each of those elements are carried over from the page they just came from.

Using consistent colors, fonts and layouts gives your users a sense of familiarity with your site, and they will be encouraged to return in the future. Consistency also builds trust in your site, because users will know what to expect as far as your page appearance goes.

Navigation

Your site navigation scheme is the most important usability feature on your site. A usable navigation scheme will allow your users to find any information they need quickly and confidently.

There are many possible elements you can use to build your navigation scheme. The most common elements are global navigation, sidebars, breadcrumbs and site maps. There are many ways to use each of these elements, but the important thing is to remember to use them consistently across all your pages.

Global navigation

Global navigation contains the links to pages that helps users no matter what page on your site they are on. Good candidates for global navigation links include:

1. your home page
2. site map
3. search page
4. help page
5. jobs page
6. contact information
7. state home page.

All these items are either for general information or help the user use your site better.

The most common location for global navigation is tucked right under your header, where it will show up with your logo and other branding elements. Alternatively, these could be placed in a sidebar or in your footer. The important thing is to be consistent so users will know where to find these links.

There are several ways to use these items. For instance, you could have a simple link to your search page in global navigation, or you could have a text box to allow users to search directly from your global navigation. You could also have a fly-out menu that would show related links under each main link.

How many of these items you use is up to you as the web designer. As a rule, simpler is better, and many Missouri agencies use only a few, most often jobs, help and search links.

Examples:

Illustration 5 - www.mo.gov header and global navigation

Illustration 4 - DESE banner and global navigation

Sidebars

"Sidebar navigation" is really not the right term. A better description is "secondary navigation," but sidebars are the most common form of secondary navigation.

Secondary navigation points the user to different areas of specific interest on your site. For instance, you may have pages for the general public, a section for regulated industries and another section that explains how your agency operates.

Guideline: Secondary navigation should be consistent throughout your site. While individual links may change, the look-and-feel should become familiar as the user navigates your site.

In the following examples, Agriculture uses fly-out menus to allow users to go deeper into the MDA site. DESE divides their menu into functional areas with popular links grouped under each topic.

Illustration 7--Agriculture Secondary Navigation

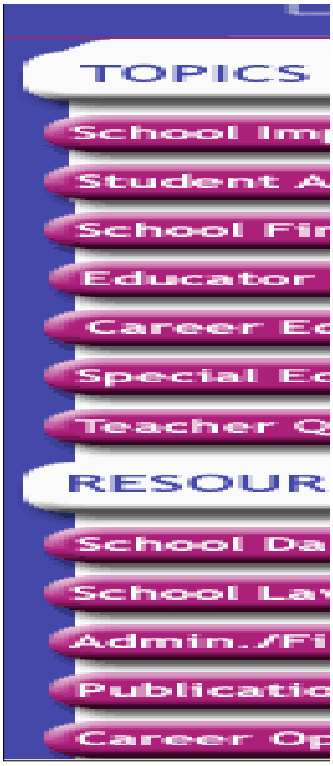

Illustration 6--DESE Secondary Navigation

Secondary navigation can also be included in a header or footer, like Natural Resources

Illustration 8--DNR Secondary Navigation in a footer

does in this example:

Breadcrumbs

Breadcrumbs are a text-based reference to your site's structure. They show users where

Illustration 9 - MDI Breadcrumbs

they are in the site and give a trail for them to follow to get back to a parent section.

Breadcrumbs give users an option to using the Back button for navigation and can help some users negotiate your site more effectively.

While studies have not shown that users have any strong preference for using breadcrumbs for navigation, effective use of breadcrumbs can show the logical structure of your site and give clues to users for future searches.

Layout

As mentioned in the "Branding" section, having a consistent layout to your pages helps brand your site and makes it feel familiar to users.

A good layout will help your users use your site more effectively as well. When your header, navigation, content and footer are in the same place for each document in your site, users know where to to look to find content, links, and other information.

While there are countless layout possibilities for your site, there are a few principles to keep in mind:

- Pages should flow. Users instinctively look at the top left corner of the page when a page pops up. Your layout should help direct their attention to your content.
- Put important content "above the fold." Users should get the most important information on your page without having to scroll.
- Use white-space in your layout. Putting some blank space around your content makes it more prominent and easier to focus on.
- Make your page easy to scan. Users tend to scan pages instead of reading them. When you keep lines of text short (7-11 words), you make it easier for users to comprehend your content.
- Put related items close together. For instance, DESE's navigation sidebar (Illustration 7) explicitly puts related topics in groups. Agriculture (Illustration 6) uses lines to separate their sidebar into department functions and department programs. Illustrations should appear near relevant text.

Too much text and too many images can actually make your page harder to use. Break different sections of your page up and make them as distinctive and uncluttered as you can. Users will then be able to focus on your core items, and use your navigation tools to find everything else.

There are a couple of simple tests you can do to evaluate a new layout. One is to resize your window to popular resolutions (1024x768, 800x600, 640x480) and see how the page fits. Does it justify to one side? Does it expand and contract to fit the window?

Another way is to look at your layout from across the room. If you look at your page

from the hall outside your cube, what do you see? Is there good contrast? Do the colors work well together? Is the layout balanced?

Guideline: The simpler the layout, the better.

Page speed

Another element of usability is speed. How quickly does your page pop up in a browser. That depends on how much code your page contains.

Guideline: The smaller file size, the better.

What affects your page speed? Here's some common elements that add weight to you page:

- the HTML code in the page itself
- server-side includes
- graphics
- external scripts, like Javascript or CSS
- multimedia, like sound, video or Flash

HTML

Make sure you don't have extra code in your page. If you have converted a document from Microsoft Office, for example, you can strip out all the formatting code that the conversion puts in and reduce your page size up to 80 percent.

Make sure you use CSS to format your HTML elements instead of using <font>, and other obsolete tags, and switch to a table-less format to reduce all the extra code needed for tables (remember, those <tr> and <td> tags with their attributes start bytes to your page pretty quickly).

It may help to think of it as a ratio of content to code: the higher the ratio (more content, less code), the better.

Server-side includes

Server-side includes are good things to use, but you need to keep in mind that each one adds weight to your page.

Guideline: Keep your server-side includes as lightweight as possible.

Keep comments out of your server-side includes. You don't need those comments repeated on every page. Instead, consider explaining what your SSIs do in your documentation for your site.

Graphics

Guideline: Make your graphics as small as possible.

No, don't resize all of them to 10x10 pixels. But use a graphics editor like Fireworks to optimize the file size.

For GIFs, look at how many colors your graphic actually uses. If you can reduce it to a 32 or 64-bit palette, your file size will decrease dramatically.

For JPGs, reduce the quality to 50 or 60 percent. This will reduce the file size without noticeably affecting the image quality on the web.

External scripts

If you are linking external scripts or CSS in your file, make sure each page you link from actually needs the external file. While these files can be cached, you can't be sure of any user's browser settings, so you don't know if unnecessary external files are slowing your page display.

Remember, too, that an estimated 10% of users may have Javascript turned off, or may not be able to use it at all. There are different versions of Javascript as well, and if you are using a Netscape or IE specific version instead of a cross-platform version, your users may not benefit from your scripting at all.

Multimedia

Sounds, video and Flash can make your page more interesting, but at a cost. Make sure you save your audio and video files in a compressed format and keep the files small.

Multimedia files require helper applications, which have to load in the background and may cause delays in your page.

And remember that many users don't have speakers available, or are non-visual. Any content presented in multimedia should have an alternate presentation for accessibility.

Check your page speed

Both the IE and Mozilla/Firefox Accessibility Toolbars include a link to http://www.web siteoptimization.com, a free service that measures your page speed.

The site looks at your web page, calculates the size of all the code, images, CSS, scripts and any other element and tells you how long a browser will take to download the page at various speeds.

You should check your pages against www.web siteoptimization.com during any redesign to see what page components may be slowing down your page.

Plug-ins

Almost any code that isn't HTML, XHTML, text, GIF or JPG requires some addition software for the browser to display it. The additional software is called a "plug-in." The most common examples are PDF files, which require Adobe Acrobat or Adobe Acrobat Reader to view, and Macromedia's Flash, which displays interactive content.

When you use these file types, you force the user's PC to open up the plug-in and download the file. As a rule, these files are larger than an equivalent HTML file, so the user has to wait for the helper program to open and then wait for the file to download. If the file is large and a user has only a dial-up connection, the user could have to wait several minutes to see the content.

Standard: If you use files that require a plug-in, you must provide a link to allow users to download and install the plug-in.

Standard: You must identify the type of plug-in needed to view the document before the user clicks on a link to view the document.

You cannot assume that users have Acrobat Reader, Flash, Microsoft Office or any other software on their computers. You can't even be sure what browser they may use, and whether that browser will help them with plug-ins. That's why you need to give them the link.

If you identify the type of plug in, or the file type of the link, you give users some choice in how they may want to view the document. If you have a video, for instance, users can decide whether they can use already-installed video software or if they want to download a new program.

Guideline: You should indicate the file size of any document that requires a plug-in.

If you clearly mark that a particular audio or video file is several megabytes, users can decide whether or not to click on the link and wait for the download. If you don't indicate file size, users may initiate a download and get frustrated if the file takes more than a few seconds to load.

Guideline: Avoid gratuitous use of plug-in technology.

Just because you can create a multimedia splash page doesn't mean that you should. Make sure you have a reason to use the technology you use. If the plug-in file doesn't add information or illustrate an example, think twice before you add that file to your site.

Splash pages done in Flash are almost never necessary on government sites. They may be appropriate on a marketing page, where users expect to be entertained and amazed, but government is generally here to inform, not entertain. If you want to amaze the users, make your site simple and useful.

Examples:

Illustration 11--
MDC plug-in links

Missouri Department of Insurance (PDF 85 KB)
Consumer Complaint Guides
HMO Complaint Index
Workers Compensation FAQ (PDF 357 KB)

Illustration 10--MDI Plug-in identification and file size

PDF, Flash

PDF files should be used when it is important to preserve the format of the document, like in a form that users must mail to your agency, or when it is assumed that the document will be printed, like a brochure. Even with documents designed for print, though, the content should be available on your site in HTML format.

Flash files are appropriate for specific applications, such as games or video, but should not be used as the sole means of presenting content. Flash is not always accessible, so you should make sure meaningful content is available in HTML format.

While some web development tools, like Dreamweaver, make it easy to create Flash buttons for your site, you should use HTML and CSS to create any presentation or rollover effects for your links.

Audio and Video

Audio and video files should be used with extreme caution. Both require hardware as well as software for users to hear or see the files, and you cannot assume that they have the capability to use the files.

For instance, many businesses and state agencies do not install sound cards or speakers on desktop PCs. Users cannot hear any audio files and only get to watch silent movies. Older systems may have card that cannot handle large files well, leading to skips in audio or jumpy video.

Audio/video files can be extremely large, and can take a long time to download on a dial-up system. This can be extremely frustrating for some users if they don't know how large a file is before they start to download.

Audio and video files can come in a variety of formats and no media player can display all formats. However, mp3 and mpeg (also known as mpg) files follow standards set by the Moving Picture Expert Group (MPEG—http://www.mpeg.org/) and are supported by most media players.

Resources

Usability First: http://www.usabilityfirst.com/

Usability.gov: http://usability.gov/guidelines/index.html

Sitepoint: http://www.sitepoint.com/subcat/usability

Web Pages That Suck: http://www.webpagesthatsuck.com/